ABB Drives

User's Manual
FlashDrop
MFDT-01

บริษัท ที.จี. คอนโทรล จำกัด
1683 ทาวน์อินทาวน์ ซอย 9 แขวงพลับพลา เขตวังทองหลาง กรุงเทพฯ 10310
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FlashDrop
MFDT-01

User's Manual

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About the manual

What this chapter contains

Th s chapter conta ns nformat on about ntended aud ence of th s manual and where the user can get add t onal nformat on, product and serv ce nqu r es, product tra n ng and prov de feedback on th s manual.

Intended audience

The manual s ntended for persons us ng the FlashDrop. Read t before use.

The manual s wr tten for readers worldw de. Both SI and mper al un ts are shown.

Additional information for users

Please v s t at FlashDrop product page for more nformat on about FlashDrop.

- Go to the s te http://www.abb.com w th your Internet browser
- Select Our offer ngs: ABB Product Gu de
- -> Motors, Dr ves and Power Electron cs: Dr ves
- -> Low Voltage AC Dr ves: e ther Component dr ves or General Mach nery dr ves or Standard dr ves
- Select FlashDrop under the L nks t tle

There you w ll also f nd l nks to FlashDrop product tra n ng.

Product training

For nformat on on ABB product tra n ng, nav gate to www.abb.com/dr ves and select *Drives - Training courses* on the r ght pane.

Product and service inquiries

Address any nqu r es about the product to your local ABB representat ve, quot ng the type code and ser al number of the un t n quest on. A l st ng of ABB sales, support and serv ce contacts can be found by nav gat ng to www.abb.com/dr ves and select ng *Drives - World wide service contacts* on the r ght pane.

Providing feedback on ABB Drives manuals

Your comments on our manuals are welcome. Go to www.abb.com/dr ves, then select success vely *Drives – Document Library – Manuals feedback form* on the r ght pane.

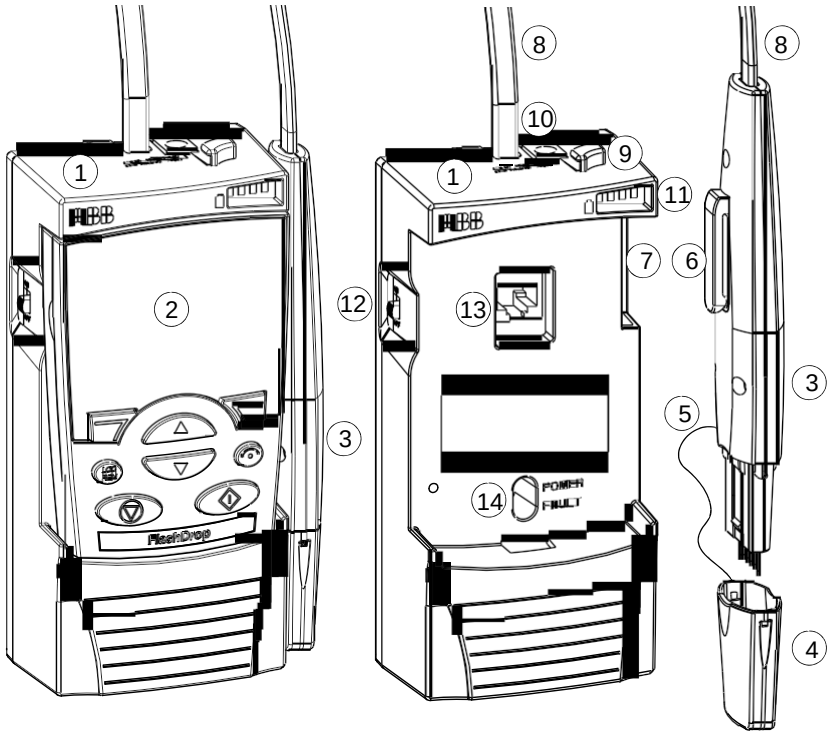
Getting started

What this chapter contains

The chapter describes the construction and installation of the FlashDrop.

Overview

The FlashDrop is a device used to edit parameter values and visibility and for copying parameters fast to unpowered drives.



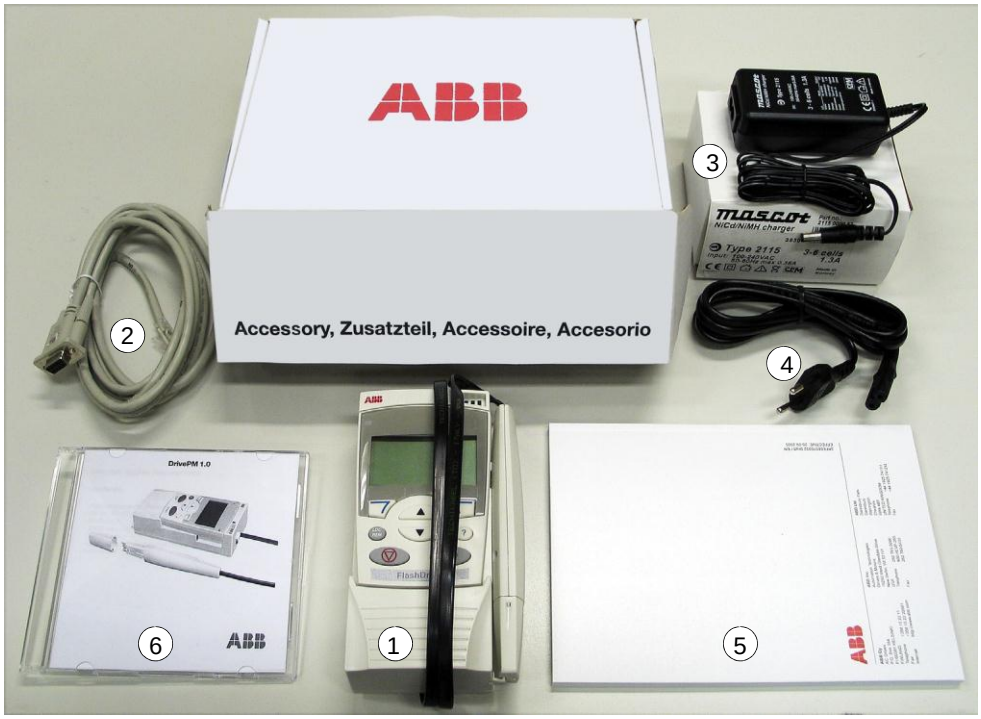
1	Base unit
2	FlashDrop Control Panel
3	Programming tip
4	Programming tip cap
5	Programming tip safety line (not provided)
6	Programming tip clip
7	Programming tip holder

8	Programming tip cable
9	Clip for the programming tip cable
10	Battery charger connection
11	Battery charge level indicators (four LEDs)
12	Power switch
13	FlashDrop Control Panel and PC connection
14	Power OK and Fault LEDs (see *LEDs* on page *49*)

Unpacking

The del very package conta ns the follow ng tems:

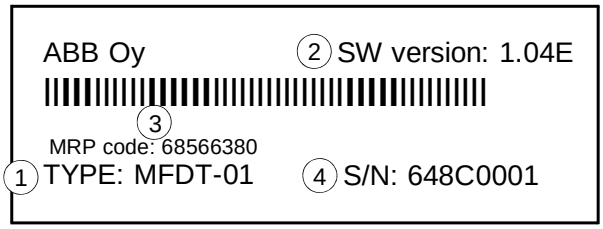
- FlashDrop (1)
- PC cable (2)
- battery charger (3)
- battery charger ma ns (AC power) cable w th a set of plugs (not shown n the f gure) (4)
- user's manual (5)
- Dr vePM CD (6).



Check that there are no s gns of damage. Not fy the sh pper mmed ately f damaged components are found.

Type designation label

The type des gnat on label s attached to the back of the base un t. An example label and explanat on of the label contents are shown below.



Type des gnat on label

1	Type code
2	F rmware vers on
3	ABB MRP code
4	Ser al number of format YWWRXXXX, where Y: 5.9, A, - for 2005.2009, 2010, - WW: 01, 02, 03, - for week 1, week 2, week 3, - R: A, B, C - for product rev s on number XXXX: Integer start ng every week from 0001

Compatibility

The FlashDrop base unit is compatible with:

- **ACS1S0, drive firmware version 1.31b or later**
- **ACS3S0, drive firmware version 2.41a or later**
- **ACSSS0-01 and ACHSS0-01, drive firmware version 3.10b or later. There needs to be a FlashDrop connector in the drive under the control panel.**
- **DrivePM version 1.1 or later**

FlashDrop is non-compatible with older drive firmware versions. The use with older firmware is not allowed.

To find out the firmware version of your drive, see page *27*, or check the value of parameter 3301 FW VERSION in the drive.

To find out the firmware and hardware versions of your FlashDrop, see page *44*.

To create and edit FlashDrop parameter sets with the DrivePM PC tool or FlashDrop, correct templates are needed. Both DrivePM and FlashDrop templates can be downloaded from the ABB Internet site.

Safety instructions

Follow these safety instructions when using the FlashDrop.

WARNING! Ignoring the following instructions can cause physical injury or death, or damage to the equipment.

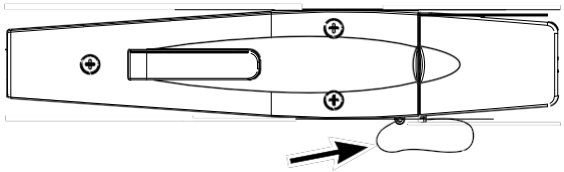
- Use the FlashDrop only with an unpowered drive.
- Do not use the FlashDrop if the cable is broken.

Installation and commissioning flowchart

Task	See/note
Unpack and check the un ts. Check the type code nd cated on the type des gnat on label aga nst the or g nal order.	*Unpacking*, page *12* *Type designation label*, page *12*
Charge the FlashDrop base un t.	*Charging*, page *15*
Spec fy clock sett ngs for the FlashDrop. Adjust the d splay contrast, f necessary.	*How to set the date and time*, page *25* *How to adjust the display contrast*, page *26*
Check the compat b l ty. Check parameter table vers on and other propert es.	*Safety instructions*, page *13* *Checking the properties and compatibility*, page *24*
Install the Dr vePM tool. Conf rm that your computer meets the m n mum system requ rements to nstall Dr vePM tool. See Dr vePM CD-ROM cover for requ rements or readme.txt f le n the root d rectory of the CD-ROM.	*How to install DrivePM tool, version 1.1 or later*, page *16* Note: Parameter templates suppl ed by Dr vePM CD-ROM are also nstalled n ded cated Dr vePM subfolders for ACS150, ACS350, ACS550 and ACH550 products.
Download the FlashDrop base un t parameter templates from the Dr vePM to the FlashDrop.	How to download templates from the Dr vePM to FlashDrop base un t, page *28*. Note: The del vered FlashDrop base un t does not nclude any parameter templates as default. The necessary templates need to be downloaded to FlashDrop. The ed t ng of parameter set n FlashDrop base un t requ res that appropr ate parameter template s saved n FlashDrop base un t.
If necessary, download templates from the Internet and download to the FlashDrop.	*Checking the properties and compatibility*, page *24* *How to download templates from the Internet*, page *28*. Note: The download ng of templates from the Internet s necessary only when an appropr ate template cannot be found n Dr vePM subfolder.

Providing the programming tip with a safety line

To avo d los ng the cap of the programm ng t p, you can attach a th n l ne (not prov ded) to the eyelets of the programm ng t p.



Charging

Charge the FlashDrop.

Note: The l ght refers to the LED on the charger. The LEDs on the FlashDrop base un t are always all l t when the charger s connected and FlashDrop base un t s sw tched on.

When charg ng the FlashDrop battery, the charger operat on s the follow ng:

1. In t al zat on (orange l ght)
2. Charg ng (red l ght)
3. F nal z ng the charge (bl nk ng green l ght)
4. Battery s charged (green l ght).

Note: To charge the battery aga n, the charger must be removed from the FlashDrop so that the n t al zat on (orange l ght) s act vated n the charger. Th s s a safety procedure. If the FlashDrop s sw tched on and charged once, t can not be charged aga n before t s removed from the charger. You can use the FlashDrop wh le charg ng. Please see the charger user's manual for more nformat on.

Connecting

Mains electricity supply (AC power source) – charger – base unit

Charge the base un t w th the prov ded charger only.

FlashDrop Control Panel – base unit

The control panel s connected to the base un t w th the prov ded RJ-45 connector.

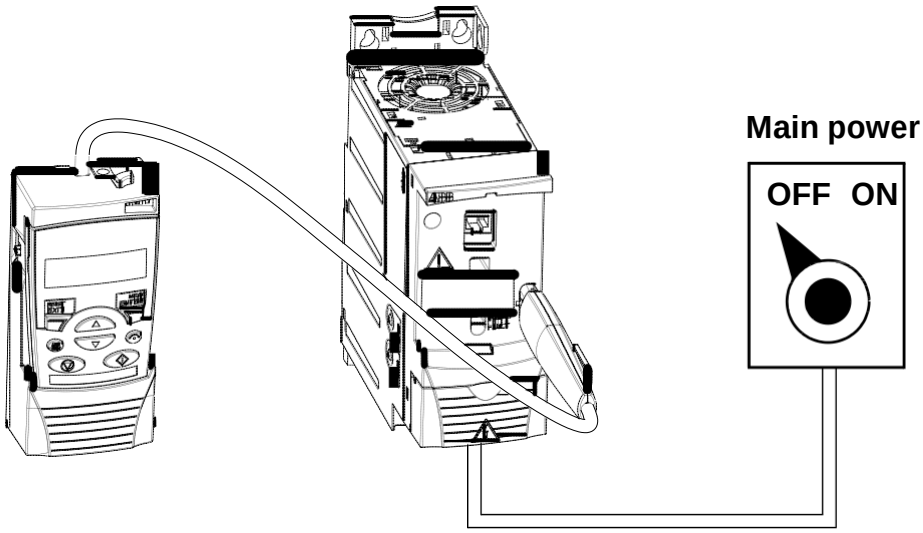
PC – base unit

To load parameter sets between the Dr vePM PC tool and the FlashDrop, connect your PC to the base un t w th the PC cable. Use the prov ded cable only. The FlashDrop panel has to be removed for PC connect on.

FlashDrop – drive

The FlashDrop s connected to the dr ve w th the programm ng t p. The dr ve can be nstalled or rema n n the package.

Note: The dr ve must be d sconnected from the ma ns (AC power source) when the FlashDrop s connected.



How to install DrivePM tool, version 1.1 or later

Dr vePM (Dr ve Parameter Manager) s a PC tool for

1) creat ng and ed t ng parameter sets of ACS150, ACS350, ACS550 and ACH550 to be su table for FlashDrop un t,

2) transferr ng these sets between PC and FlashDrop,

3) transferr ng template f les to FlashDrop and

4) updat ng FlashDrop f rmware.

Dr vePM s des gned to run under the M crosoft W ndows 2000 or W ndows XP operat ng systems on IBM -compat ble PCs.

You should qu t all appl cat ons before start ng the nstallat on. Un nstall any prev ous vers on of Dr vePM before nstall ng. You must have Adm n strator pr v leges to be able to do the nstall ng. Before cont nu ng, k ndly remove all f les that W ndows was not able to remove from Dr vePM d rectory and t's subd rector es.

1. Run the SETUP.EXE from the root d rectory of th s CD.

2. Follow the nstruct ons g ven by the Installat on W zard.

Dr vePM conta ns onl ne help wh ch can started by press ng 'F1' key or from the 'Help' Menu. Onl ne Help requ res MS InternetExplorer 3.0 or later nstalled n the computer.

You can reg ster your Dr vePM/FlashDrop product by f ll ng n and return ng the reg strat on form (reg strat on.pdf n the root d rectory of the Dr vePM CD-ROM).

How to download parameter templates to the FlashDrop

The del vered FlashDrop base un t does not nclude any parameter templates as default. The necessary templates need to be downloaded to FlashDrop. Parameter templates suppl ed by Dr vePM CD-ROM are nstalled n ded cated Dr vePM subfolders for ACS150, ACS350, ACS550 and ACH550 products. To update the templates to the latest vers on, see *How to download templates from the Internet*, page *28*. You can have e ght parameter templates n total n your FlashDrop s multaneously.

Storing

When the FlashDrop s not used, keep the capped programm ng t p n ts holder. W nd the cable round the base un t tw ce, start ng from the back of the base un t, and then tw st t round the cl p on top of the base un t as shown on the f gure below.

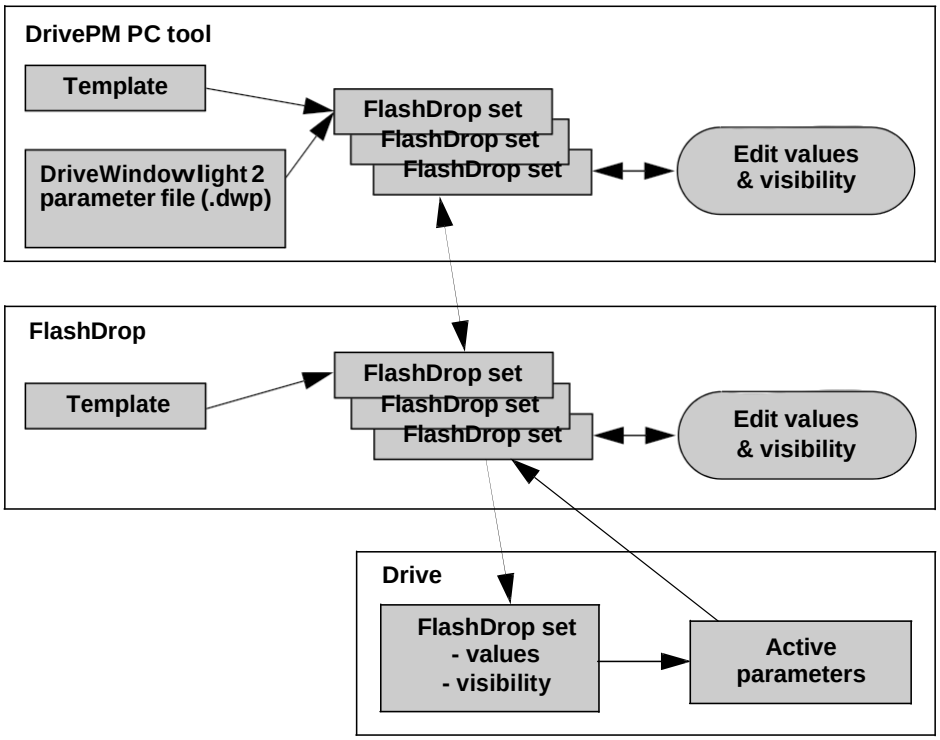
Operation

What this chapter contains

The chapter g ves a general v ew of us ng the FlashDrop w th the Dr vePM PC tool to parameter ze dr ves. It descr bes n deta l the FlashDrop Control Panel keys and d splay f elds and how to use the FlashDrop for the dr ve parametr zat on. The state d agram of the panel user nterface s ncluded n *Additional information*, page *55*. See also *Glossary*, page *53*.

Using the FlashDrop for parametrization of drives

W th the FlashDrop, parameters can be fast cop ed to unpowered dr ves, before del very from the warehouse or dur ng the mechan cal nstallat on at the s te. Because the FlashDrop s used w th an unpowered dr ve, the dr ve can rema n n the package dur ng the parametr zat on. The FlashDrop also allows you to h de selected parameters to protect the dr ve and connected mach nery and show only nformat on relevant to the appl cat on.



Note: The pr mary way to create and ed t parameter sets s by us ng the Dr vePM PC tool. For nstruct ons on us ng the Dr vePM, see the Dr vePM help and *How to install DrivePM tool, version 1.1 or later*, page *16*.

Us ng the FlashDrop to download parameters to dr ves cons sts of four phases.

1. Create a FlashDrop parameter set w th the Dr vePM from a template or a Dr veW ndowL ght parameter f le. The name and author n the header nformat on can be ed ted. See the Dr vePM help.

   or

   Create a FlashDrop parameter set w th the FlashDrop Control Panel from a template. The header nformat on of the set conta ns data about the set, nclud ng ID, name, author and creat on t me. The nformat on s generated automat cally. See *How to initialize (create) a parameter set* on page *30*.

   or

   Upload a parameter set from the dr ve to the FlashDrop. The header nformat on s generated automat cally. See *How to upload a parameter set from the drive* on page *32*.

2. Ed t the set w th the FlashDrop Control Panel by g v ng values to parameters and sett ng v s b l t es of parameters and parameter groups. See *How to edit a parameter set* on page *35*.

   or

   Ed t the set w th the Dr vePM by g v ng values to parameters and sett ng v s b l t es of parameters and parameter groups. Then download the set to the FlashDrop (FlashDrop menu -> Download To FD). You can cont nue ed t ng w th the FlashDrop Control Panel f necessary. See the Dr vePM help.

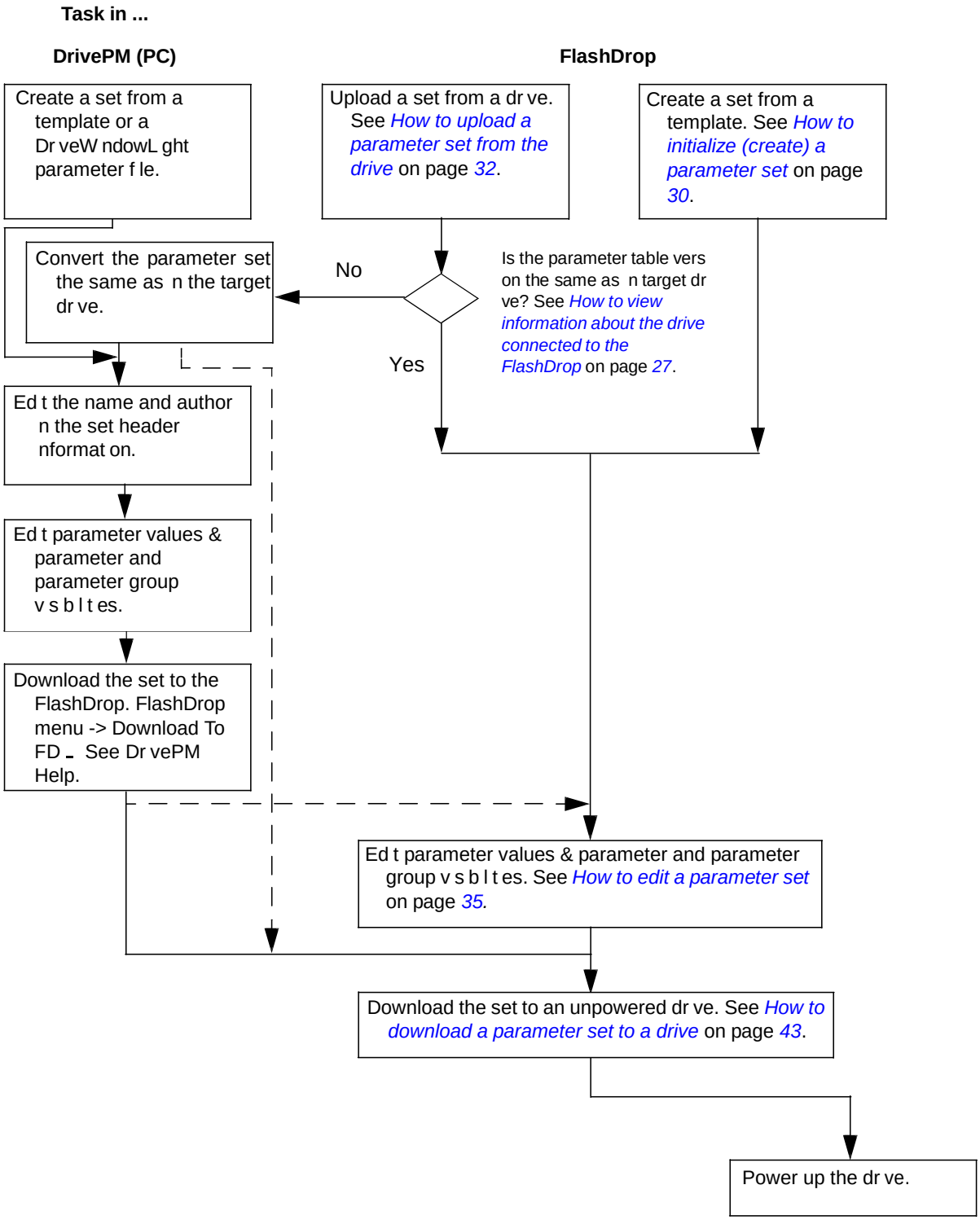
3. Download the set from the FlashDrop to one or more unpowered dr ves. Ensure that the dr ve s d sconnected from the ma ns (AC power source). See *How to download a parameter set to a drive* on page *43*.

4. Power up the dr ve to act vate the downloaded parameter values and v s b l t es.

See also the flowchart of the dr ve parametr zat on w th the FlashDrop on page *21*.

Note: Also parameters 9902 APPLIC MACRO and 1611 PARAMETER VIEW can be made nv s ble n a FlashDrop parameter set. After the set has been downloaded to a dr ve and act vated, to be able to change these parameters n the dr ve, e.g. to use a macro, you have to f rst make them v s ble w th the FlashDrop. Upload the set from the dr ve to the FlashDrop, make parameters 9902 APPLIC MACRO and 1611 PARAMETER VIEW v s ble, and then download the set aga n to the dr ve. You can sw tch the dr ve to use other parameter sets (macros) w th parameter 9902 APPLIC MACRO. To react vate the parameter values def ned by the downloaded FlashDrop parameter set, set parameter 9902 to value 31 (FD PAR SET). You can sw tch the dr ve to use the default v s b l t es of the parameters and parameter groups by sett ng parameter 1611 PARAMETER VIEW to value 0 (DEFAULT). To react vate the v s b l t es def ned by the downloaded FlashDrop parameter set, set parameter 1611 to value 1 (FLASHDROP).

FlashDrop parametrization flowchart


Task in ...
DrivePM (PC)
FlashDrop
Create a set from a template or a Dr veW ndowL ght parameter f le.
Upload a set from a dr ve. See How to upload a parameter set from the drive on page 32.
Create a set from a template. See How to initialize (create) a parameter set on page 30.
Convert the parameter set the same as n the target dr ve.
No
Is the parameter table vers on the same as n target dr ve? See How to view information about the drive connected to the FlashDrop on page 27.
Yes
Ed t the name and author n the set header nformat on.
Ed t parameter values & parameter and parameter group v s b l t es.
Download the set to the FlashDrop. FlashDrop menu -> Download To FD _ See Dr vePM Help.
Ed t parameter values & parameter and parameter group v s b l t es. See How to edit a parameter set on page 35.
Download the set to an unpowered dr ve. See How to download a parameter set to a drive on page 43.
Power up the dr ve.

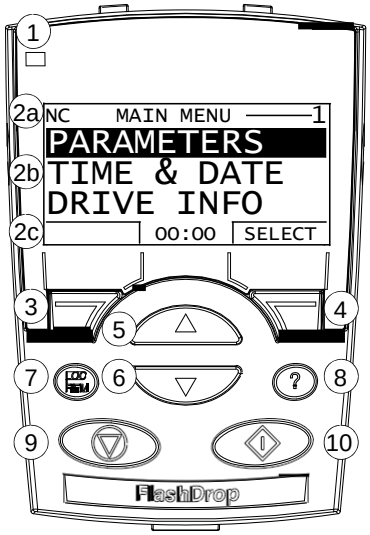
FlashDrop Control Panel and its operation

The FlashDrop Control Panel is the user interface for using the FlashDrop.

Note: It is not possible to use the FlashDrop Control Panel as the control panel for the drive.

Control panel overview

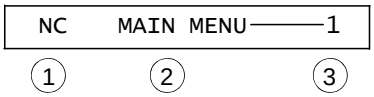
The following table summarizes the key functions and displays in the FlashDrop Control Panel.



No.	Use
1	Status LED – See *LEDs* on page *49*.
2	LCD display – Divided into three main areas: a. Status line – variable, depending on the mode of operation, see *Status line* on page *23*. b. Center – variable; in general, shows parameter values, menus or lists. c. Bottom line – shows current functions of the two soft keys and, if enabled, the clock display.
3	Soft key 1 – Function depends on the context. The text in the lower left corner of the LCD display indicates the function.
4	Soft key 2 – Function depends on the context. The text in the lower right corner of the LCD display indicates the function.
5	Up – • Scrolls up through a menu or list displayed in the center of the LCD display. • Increments a value if a parameter is selected. Holding the key down changes the value faster.
6	Down – • Scrolls down through a menu or list displayed in the center of the LCD display. • Decrements a value if a parameter is selected. Holding the key down changes the value faster.
7	LOC/REM – Not used.
8	Help – Displays context sensitive information when the key is pressed in the parameter menu. The information displayed describes the parameter currently highlighted in the center of the display.
9	STOP – Not used.
10	START – Downloads the selected set when you are in the set selection display (SET SELECT shown on the status line) or in the Set action menu (SET ACTIONS shown on the status line), see *How to download a parameter set to a drive* on page *43*.

Status line

The top l ne of the LCD d splay shows the bas c status nformat on of the FlashDrop.



No.	Field	Alternatives	Significance
1	Dr ve connect on	NC	Not connected to a dr ve.
		DRV	Connected to a dr ve.
2	Panel operat on mode		• Name of the current mode • Name of the l st or menu shown • Name of the operat on state, e.g. PAR EDIT.
3	Number of the selected tem		Number of the h ghl ghted tem, e.g mode or parameter group.

Operation principles

You operate the control panel w th the help of menus and keys. The keys nclude two context-sens t ve soft keys, whose current funct on s nd cated by the text shown n the d splay above each key.

You select an opt on, e.g. operat on mode or parameter, by scroll ng the ▲ and ▼ arrow keys unt l the opt on s h ghl ghted (n reverse v deo) and then press ng the relevant soft key. W th the r ght soft key you usually enter a mode, accept an opt on or save the changes. The left soft key s used to cancel the made changes and return to the prev ous operat on level.

The control panel has the follow ng panel modes: Parameters, T me & Date and Info. The operat on n the d fferent modes s descr bed n th s chapter.

In t ally, the control panel s n the Ma n menu, where you select the appropr ate mode for your task. The status l ne (see sect on *Status line* on page *23*) shows the name of the current menu, mode, tem or state.

When an error occurs, the control panel shows the error message. Press OK to reset. For more nformat on, see chapter *Fault tracing*.

How to do common tasks

The table below lists common tasks, the mode in which you can perform them and the page number where the steps to do the task are described in detail.

Task	Mode	Page
How to set the date and time in the FlashDrop	Time & Date	*25*
How to adjust the display contrast	Main menu	*26*
How to check the parameter table versions and other properties of the drive, FlashDrop parameter sets and templates	Info and Parameters	*24*
How to view information about the drive connected to the FlashDrop	Info	*27*
How to download templates from the Internet	DrivePM (PC)	*28*
How to initialize (create) a parameter set	Parameters	*30*
How to upload a parameter set from the drive	Parameters	*32*
How to view the parameter set information	Parameters	*34*
How to edit a parameter set	Parameters	*35*
How to edit the value of a parameter	Parameters	*36*
How to view and edit the values of changed parameters	Parameters	*38*
How to edit the visibility of a parameter	Parameters	*40*
How to edit the visibility of a parameter group	Parameters	*41*
How to clear (delete) a parameter set	Parameters	*42*
How to download a parameter set to a drive	Parameters	*43*
How to view information about the FlashDrop	Info	*44*
How to find out the control panel version	At power up	*44*

Checking the properties and compatibility

To be able to download a parameter set to a drive, the parameter table version and other properties – drive type and, if specified, rating – of the set must be the same as for the drive.

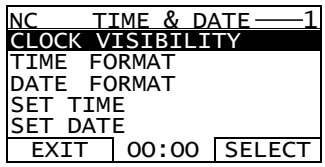
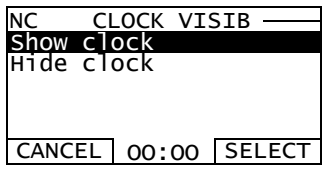
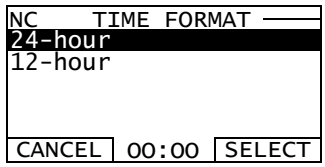
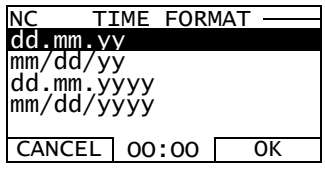
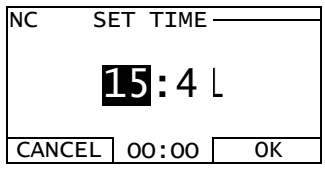
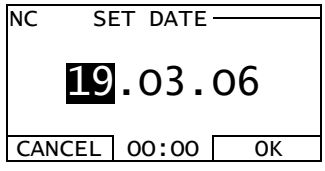
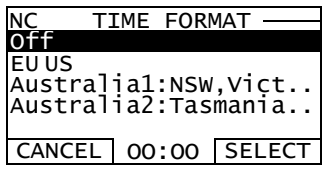
- To find out the properties of the drive, view the drive information. See *How to view information about the drive connected to the FlashDrop* on page *27*.
- To find out the properties of a parameter set (other than "[empty]") in the FlashDrop, view its header information. See *How to view the parameter set information* on page *34*.
- To find out whether a template for particular properties exists in the FlashDrop, start initializing an empty set and check whether any of the shown templates has these properties. See *How to initialize (create) a parameter set* on page *30*.
- If a suitable template does not exist in the FlashDrop, download it from your PC with DrivePM or download the latest version from the Internet. See *How to download templates from the Internet* on page *28*.

Time & Date mode

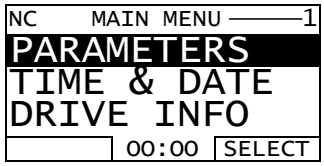
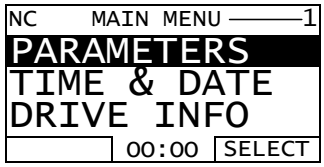
In the T me & Date mode, you can spec fy clock sett ngs for the FlashDrop.

The control panel conta ns a battery to ensure the funct on of the clock when the control panel s not powered by the base un t.

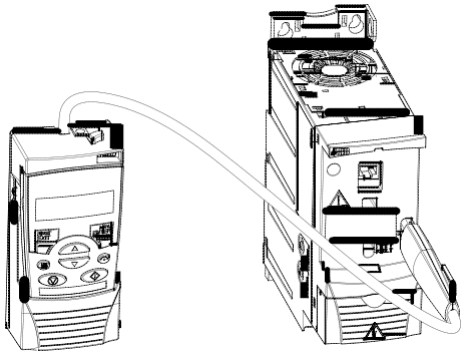
How to set the date and time

Step	Action	Display
1.	If you are not n the Ma n menu, press EXIT repeatedly unt l you get there.	
2.	Go to the T me & Date mode by select ng TIME & DATE on the menu w th keys ▲ and ▼, and press ng SELECT	
3.	• To set the v s b l ty of the clock on the bottom l ne of the LCD d splay, select CLOCK VISIBILITY on the menu and press SELECT. Select the preferred sett ng w th keys ▲ and ▼, and press SELECT.	
	• To set the t me format of the clock, select TIME FORMAT on the menu and press SELECT. Select the preferred sett ng w th keys ▲ and ▼, and press SELECT.	
	• To set the format of the date, select DATE FORMAT on the menu and press SELECT. dd means the day, mm the month and yy or yyyy the year. Select the preferred sett ng w th keys ▲ and ▼, and press OK.	
	• To set the t me, select SET TIME on the menu and press SELECT. Spec fy the hours w th keys ▲ and ▼, and press OK.Then spec fy the m nutes. Press OK to save or CANCEL to cancel your changes.	
	• To set the date, select SET DATE on the menu and press SELECT. Spec fy the f rst part of the date (day or month depend ng on the date format) w th keys ▲ and ▼, and press OK. Repeat for the second part. After spec fy ng the year, press OK. To cancel your changes, press CANCEL.	
	• To set the used dayl ght sav ng, select DAYLIGHT SAVING on the menu and press SELECT. Select your area or off w th keys ▲ and ▼, and press SELECT.	

How to adjust the display contrast

Step	Action	Display
1.	If you are not in the Main menu, press EXIT repeatedly until you get there.	
2.	• To increase the contrast, press keys SELECT and ▲ simultaneously. • To decrease the contrast, press keys SELECT and ▼ simultaneously. The contrast setting is not saved. The default contrast setting is resumed each time the FlashDrop is started up.	

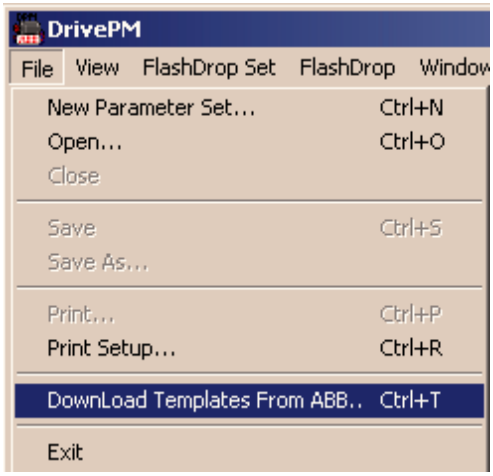
How to view information about the drive connected to the FlashDrop

<table>
<tr><th>Step</th><th>Action</th><th>Display</th></tr>
<tr><td>1.</td><td>If you are not in the Main menu, press EXIT repeatedly until you get there.</td><td>NC MAIN MENU 1
PARAMETERS
TIME & DATE
DRIVE INFO
00:00 SELECT</td></tr>
<tr><td>2.</td><td>Ensure that the drive is disconnected from the mains (AC power source).
Insert the programming tip in the FlashDrop connection on the drive. Depending on the drive type, the connection is located on the front of the drive or in the control panel recess.
The top left corner of the FlashDrop display shows now DRV indicating that the FlashDrop is connected to a drive.
  </td><td>DRV MAIN MENU 1
PARAMETERS
TIME & DATE
DRIVE INFO
00:00 SELECT</td></tr>
<tr><td>3.</td><td>Go to the Drive Info mode by selecting DRIVE INFO on the menu with keys ▲ and ▼, and pressing SELECT. The display shows the following information about the drive:
DRIVE TYPE: type of the drive
PARAMETER TABLE: parameter table version, which must match the version of the sets that are downloaded to the drive.
DRIVE RATING: rating of the drive. See Drive ratings table on page 57 for more information.
FIRMWARE: firmware version of the drive
AREA: EUR or US, selects appropriate defaults and units
You can scroll the information with keys ▲ and ▼.</td><td>DRV DRIVE INFO
DRIVE TYPE:
ACS350
PARAMETER TABLE:
241A hex
DRIVE RATING:
EXIT 00:00

DRV DRIVE INFO
2A41 hex
FIRMWARE:
241A hex
AREA:
EUR
EXIT 00:00</td></tr>
<tr><td>4.</td><td>Return to the Main menu by pressing EXIT.</td><td>DRV MAIN MENU 1
PARAMETERS
TIME & DATE
DRIVE INFO
00:00 SELECT</td></tr>
</table>

How to download templates from the Internet

If the FlashDrop and Dr vePM do not have su table templates for the dr ve where you ntend to download the parameter set (see sect on *Checking the properties and compatibility* on page *24*), you have to download the correct templates from the Internet w th Dr vePM.

Step	Action
1.	Go to the FlashDrop product page w th your Internet Browser: • Go to the s te http://www.abb.com w th your Internet browser • Select Our offer ngs: ABB Product Gu de -> Motors, Dr ves and Power Electron cs: Dr ves -> Low Voltage AC Dr ves: e ther Component dr ves or General Mach nery dr ves or Standard dr ves • Select FlashDrop under the L nks t tle Or select F le menu -> Download Templates from ABB. n Dr vePM tool. 
2.	Download the template package to the PC where you are runn ng the Dr vePM, n folder Program F les / Dr veWare / Dr vePM.
3.	Extract the package. The Dr vePM templates are now v s ble n the Dr vePM PC tool. Download next the FlashDrop base un t templates to the FlashDrop, as nstructed n steps 4. and 5.
4.	Remove the control panel from the FlashDrop. Connect the Flash Drop base un t to the PC w th the prov ded data cable OPCA-02 by plugg ng t to the control panel / PC connect on n the control panel recess of the FlashDrop base un t and to the COM port of the PC.
5.	Download the FlashDrop base un t templates from the Dr vePM to the FlashDrop: • Select the Download FlashDrop Template opt on from the FlashDrop menu. The FlashDrop Template Download d alog box s d splayed. • Select a FlashDrop template by cl ck ng Browse under Source. • Select the dest nat on f le set of the connected FlashDrop dev ce from the FlashDrop Template Locat on drop-down l st under Dest nat on. • Cl ck OK.

Parameters mode

In the Parameters mode, you can:

- download a parameter set to a dr ve
- n t al ze (create) a parameter set
- upload a parameter set from the dr ve
- v ew the header nformat on of a parameter set
- ed t a parameter set
  - ed t values of parameters for the act ve parameter set
  - ed t values of parameters for the user sets (user set1-3 and overr de set)
  - v ew and ed t values of changed parameters n the set
  - ed t the v s b l t es of parameters n the set
  - ed t the v s b l t es of whole parameter groups n the set
- clear (delete) a parameter set.

How to initialize (create) a parameter set

Create the parameter set by us ng a template compat ble w th the dr ve. See *Checking the properties and compatibility*, page *24*. See also *How to view information about the drive connected to the FlashDrop*, page *27* and *How to download templates from the Internet*, page *28*.

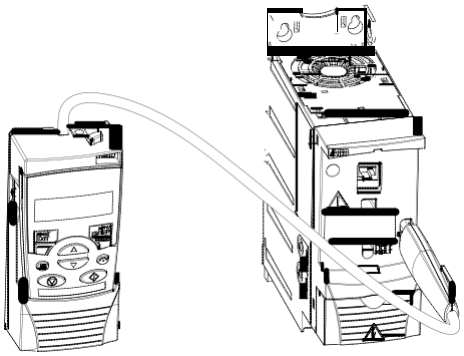
Step	Action	Display
1.	If you are not n the Ma n menu, press EXIT repeatedly unt l you get there.	NC MAIN MENU 1 PARAMETERS TIME & DATE DRIVE INFO 00:00 SELECT
2.	Go to the Parameters mode by select ng PARAMETERS on the menu w th keys ▲ and ▼, and press ng SELECT	NC SETS 1 1. Demo 2. Varying speed 3. 2 Cycles DI2 FlashDrop set 04 [empty] EXIT 00:00 SELECT
3.	Select an empty set ("[empty]") on the menu w th keys ▲ and ▼, and start ts n t al zat on by press ng INIT.	NC SETS 5 2. Varying speed 3. 2 Cycles DI2 FlashDrop set 04 [empty] 6. Traverse Ctrl EXIT 00:00 INIT
4.	Select "Create a new set" on the menu w th keys ▲ and ▼, and cont nue by press ng SELECT.	NC 5 Select init mode Create a new set Upload from drive CANCEL 00:00 SELECT
5.	Select the appropr ate template w th keys ▲ and ▼. The propert es of each template are shown below t: Dr ve type: type of the dr ve Area: EUR or US, selects appropr ate defaults and un ts Param table: parameter table vers on of the set. Control mode: scalar or vector mode. All parameter sets created by FlashDrop w ll have the same control mode. Press SELECT.	NC SET INIT Select Template 01 Drive type: ACS350 Area: EUR Param table: 230A Control mode: SCALAR CANCEL 00:00 SELECT
6.	Select the dr ve rat ng w th keys ▲ and ▼ f the set parameters depend on the rat ng, otherw se select "Not def ned". Press SELECT. See *Drive ratings table* on page *57* for more nformat on.	NC SET INIT Drive rating 2A42 CANCEL 00:00 SELECT
7.	Select the default v s b l ty for parameters and parameter groups w th keys ▲ and ▼. Press SELECT.	NC SET INIT Select visibility Visible as default CANCEL 00:00 SELECT

Step	Action	Display
8.	Message "Sav ng parameter set" s shown. If the sav ng succeeds, the panel LED s green for a moment and message "Set save OK" s shown br efly. The FlashDrop ass gns automat cally the follow ng header nformat on to the set: Name: FLASHDROP SET nn, where nn s the ndex of the set n the FlashDrop T me and date: current t me and date Author: text "FLASHDROP". The panel returns to the set select on d splay and shows the name of the n t al zed set.	NC SET SELECT———5 2. Varying speed 3. 2 Cycles DI2 FLASHDROP SET 04 FLASHDROP SET 05 6. Traverse Ctrl EXIT | 00:00 | SELECT

How to upload a parameter set from the drive

You must have a template compat ble w th the dr ve you are upload ng the set from. For check ng the dr ve nformat on, see *How to view information about the drive connected to the FlashDrop* on page *27*.

If there s no template w th the propert es you need, you have to download the correct template from your PC. The latest templates can be downloaded from the Internet accord ng to the nstruct ons n *How to download templates from the Internet* on page *28*.

Step	Action	Display
1.	If you are not n the Ma n menu, press EXIT repeatedly unt l you get there.	NC MAIN MENU 1 PARAMETERS TIME & DATE DRIVE INFO 00:00 SELECT
2.	Go to the Parameters mode by select ng PARAMETERS on the menu w th keys ▲ and ▼, and press ng SELECT.	NC SETS 1 1. Demo 2. Varying speed 3. 2 Cycles DI2 FlashDrop set 04 [empty] EXIT 00:00 SELECT
3.	Ensure that the dr ve s d sconnected from the ma ns (AC power source). Insert the programm ng t p n the FlashDrop connect on of the dr ve. Depend ng on the dr ve type, the connect on s located on the front of the dr ve or n the control panel recess. The top left corner of the FlashDrop d splay shows now DRV nd cat ng that the FlashDrop s connected to a dr ve. 	DRV SETS 1 1. Demo 2. Varying speed 3. 2 Cycles DI2 FlashDrop set 04 [empty] EXIT 00:00 SELECT
4.	Select an empty set ("[empty]") on the menu w th keys ▲ and ▼, and start ts n t al zat on by press ng INIT.	DRV SETS 5 2. Varying speed 3. 2 Cycles DI2 FlashDrop set 04 [empty] 6. Traverse Ctrl EXIT 00:00 INIT
5.	Select "Upload from dr ve" on the menu w th keys ▲ and ▼, and cont nue by press ng SELECT.	DRV 5 Select init mode Create a new set Upload from drive CANCEL 00:00 SELECT

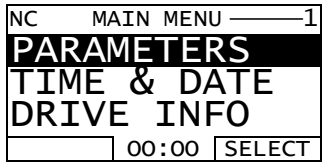
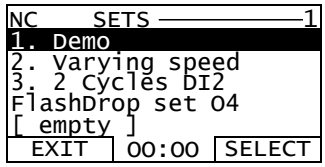
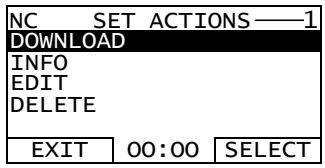
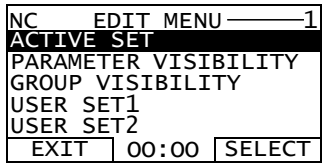
Step	Action	Display
6.	Select the drive rating with keys ▲ and ▼. If the set parameters depend on the rating, otherwise select "Not defined". Press SELECT. See *Drive ratings table* on page *57* for more information.	DRV UPLOAD SET Drive rating 2A42 CANCEL 00:00 SELECT
7.	Select the default visibility for parameters and parameter groups with keys ▲ and ▼. Press SELECT.	DRV UPLOAD SET Select visibility Visible CANCEL 00:00 SELECT
8.	Message "Uploading parameter set" is shown. Control modes of the user sets will be copied from the drive. If a user set is empty the control mode of the active set will be applied. If the saving succeeds, the panel LED is green for a moment and message "Upload OK" is shown briefly. The FlashDrop assigns the following header information to the set: Name: FLASHDROP SET nn, where nn is the index of the set in the FlashDrop Time and date: current time and date Author: text "FLASHDROP". The panel returns to the set selection display and shows the name of the initialized set.	DRV SETS 5 2. Varying speed 3. 2 Cycles DI2 FLASHDROP SET 04 FLASHDROP SET 05 6. Traverse Ctrl EXIT 00:00 SELECT

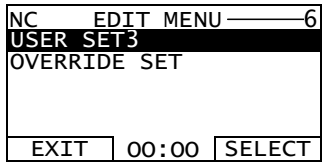
Note: You can only download the uploaded set to a drive with the same parameter table version. Otherwise the uploaded set must be converted to a correct parameter table version using the DrivePM PC tool. See the DrivePM help for more information.

How to view the parameter set information

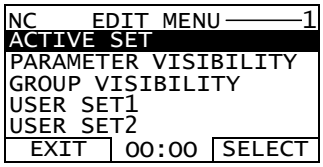
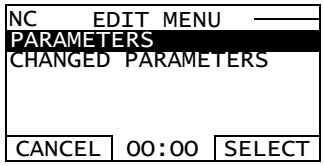
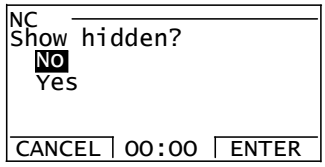
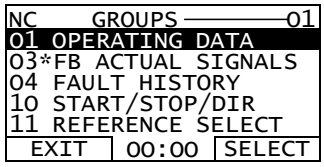
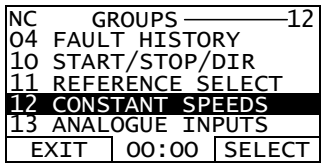
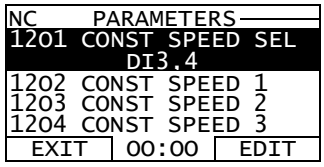
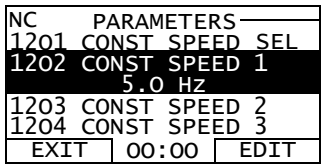
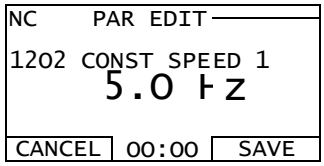
Step	Action	Display
1.	If you are not in the Main menu, press EXIT repeatedly until you get there.	NC MAIN MENU 1 PARAMETERS TIME & DATE DRIVE INFO 00:00 SELECT
2.	Go to the Parameters mode by selecting PARAMETERS on the menu with keys ▲ and ▼, and press ing SELECT.	NC SETS 1 1. Demo 2. Varying speed 3. 2 Cycles DI2 FlashDrop set 04 [empty] EXIT 00:00 SELECT
3.	Select the parameter set with keys ▲ and ▼, and press SELECT.	NC SET ACTIONS 1 DOWNLOAD INFO EDIT DELETE EXIT 00:00 SELECT
4.	Select INFO with keys ▲ and ▼, and press SELECT. The display shows the following information about the parameter set: SET INDEX: index of the set in the FlashDrop SET NAME: name of the set, freely edited in the DrivePM or created automatically when initialized in the FlashDrop (of format "FlashDrop set nn", where nn is the set index) TIME: creation time of the set DATE: creation date of the set AUTHOR: creator of the set, freely edited in the DrivePM or created automatically when initialized in the FlashDrop ("FlashDrop") DRIVE RATING: rating of the drive DRIVE TYPE: type of the drive AREA: EUR or US, selects appropriate defaults and units CONTROL MODE: scalar or vector mode PARAMETER TABLE VER: parameter table version of the set. You can scroll the information with keys ▲ and ▼.	NC PAR SET INFO SET INDEX: 4 SET NAME: FlashDrop set 04 TIME: EXIT 00:00 NC PAR SET INFO 12:23:50 DATE: 12.03.2006 AUTHOR: FlashDrop EXIT 00:00 NC PAR SET INFO DRIVE RATING: 2A42 DRIVE TYPE: ACS350 AREA: EXIT 00:00 NC PAR SET INFO EUR CONTROL MODE: SCALAR PARAMETER TABLE VER: 230A EXIT 00:00
5.	After reading the text, return to the previous display by pressing EXIT.	NC SET ACTIONS 2 DOWNLOAD INFO EDIT DELETE EXIT 00:00 SELECT

How to edit a parameter set

<table>
<tr><th>Step</th><th>Action</th><th>Display</th></tr>
<tr><td>1.</td><td>If you are not in the Main menu, press EXIT repeatedly until you get there.</td><td> 
</td></tr>
<tr><td>2.</td><td>Go to the Parameters mode by selecting PARAMETERS on the menu with keys ▲ and ▼, and pressing SELECT.</td><td> 
</td></tr>
<tr><td>3.</td><td>Select the parameter set with keys ▲ and ▼, and press SELECT.</td><td> 
</td></tr>
<tr><td>4.</td><td>Select EDIT with keys ▲ and ▼, and press SELECT.
• To edit the values of parameters, see page 36.
• To edit the values of parameters whose values have been changed before (using a list that shows changed parameters only), see page 38.
• To edit the visibility of parameters, see page 40.
• To edit the visibility of parameter groups, see page 41.
Note: The visible menu choices depends on the type of the drive to which the set is for. See the following table for a list of the sets supported by the drives
<table><tr><th></th><th>ACS1S0</th><th>ACS3S0</th><th>ACSSS0</th><th>ACHSS0</th></tr><tr><td>Active parameters</td><td>X</td><td>X</td><td>X</td><td>X</td></tr><tr><td>User set 1</td><td></td><td>X</td><td>X</td><td>X</td></tr><tr><td>User set 2</td><td></td><td>X</td><td>X</td><td>X</td></tr><tr><td>User set 3</td><td></td><td>X</td><td></td><td></td></tr><tr><td>Override set</td><td></td><td></td><td></td><td>X</td></tr></table></td><td> 

 
</td></tr>
</table>

How to edit the value of a parameter in a set

Step	Action	Display
1.	If you are not in the Edit menu, see *How to edit a parameter set* on page *35* for instructions.	
2.	Select the set (active set, user set1, user set2 ...) you want to edit with keys ▲ and ▼, and press SELECT.	
3.	Select the PARAMETERS with keys ▲ and ▼, and press SELECT.	
4.	If you want to see all parameters in the FlashDrop while editing, including those that are hidden in the set, select Yes with key ▼, otherwise leave No selected. Press ENTER. **Note:** Selecting Yes does not change the visibility of the hidden parameters. Hidden parameters and parameter groups are indicated with an asterisk (*).	
5.	Select the parameter group with keys ▲ and ▼. Press SELECT.	 
6.	Select the parameter with keys ▲ and ▼. The current value of the selected parameter is shown below it. Press EDIT.	 

Step	Action	Display
7.	Spec fy a new value for the parameter w th keys ▲ and ▼. Press ng the key once ncrements or decrements the value. Hold ng the key down changes the value faster. Press ng the keys s multaneously replaces the d splayed value w th the default value.	NC PAR EDIT 1202 CONST SPEED 1 5.5 Hz CANCEL 00:00 SAVE
8.	• To save the new value, press SAVE. • To cancel the new value and keep the or g nal, press CANCEL.	NC PARAMETERS 1201 CONST SPEED SEL 1202 CONST SPEED 1 5.5 Hz 1203 CONST SPEED 2 1204 CONST SPEED 3 EXIT 00:00 EDIT
9.	When you ex t the Ed t menu of the parameter set, you are requested to conf rm your changes. • To cancel the new values and keep the or g nal, select No w th keys ▲ ▼ . • To save the new values, select Yes w th keys ▲ and ▼, and press ENTER. Message "Sav ng parameter set" s shown br efly. If the sav ng succeeds, the panel LED s green for a moment and message "Set save OK" s shown before return ng the ma n Ed t menu. • To return to the prev ous menu, press CANCEL.	NC Confirm changes? No Yes CANCEL 00:00 ENTER

How to view and edit the values of changed parameters in a set

Th s opt on s a shortcut to those parameters that have already been mod f ed.

Step	Action	Display
1.	If you are not n the Ed t menu, see *How to edit a parameter set* on page *35* for nstruct ons.	NC EDIT MENU 1 ACTIVE SET PARAMETER VISIBILITY GROUP VISIBILITY USER SET1 USER SET2 EXIT 00:00 SELECT
2.	Select the set (act ve set, user set1, user set2 .) you want to ed t w th keys ▲ and ▼, and press SELECT.	NC EDIT MENU PARAMETER CHANGED PARAMETERS CANCEL 00:00 SELECT
3.	Select CHANGED PARAMETERS w th keys ▲ and ▼, and press SELECT.	NC CHANGED PARS 1201 CONST SPEED SEL DI3.4 1202 CONST SPEED 1 1301 MINIMUM AI1 1302 MAXIMUM AI1 EXIT 00:00 EDIT
4.	Select the parameter w th keys ▲ and ▼. The current value of the selected parameter s shown below t. Press EDIT.	NC CHANGED PARS 1201 CONST SPEED SEL 1202 CONST SPEED 1 5.5 Hz 1301 MINIMUM AI1 1302 MAXIMUM AI1 EXIT 00:00 EDIT NC PAR EDIT 1202 CONST SPEED 1 5.5 Hz CANCEL 00:00 SAVE
5.	Spec fy a new value for the parameter w th keys ▲ and ▼. Press ng the key once ncrements or decrements the value. Hold ng the key down changes the value faster. Press ng the keys s multaneously replaces the d splayed value w th the default value.	NC PAR EDIT 1202 CONST SPEED 1 5.8 Hz CANCEL 00:00 SAVE
6.	• To save the new value, press SAVE. • To cancel the new value and keep the or g nal, press CANCEL.	NC CHANGED PARS 1202 CONST SPEED 1 5.8 Hz 1301 MINIMUM AI1 1302 MAXIMUM AI1 1401 RELAY OUTPUT EXIT 00:00 EDIT

Step	Action	Display
7.	When you ex t the Ed t menu of the parameter set, you are requested to conf rm your changes. • To cancel the new values and keep the or g nal, select No w th keys ▲ ▼ and . • To save the new values, select Yes w th keys ▲ and ▼, and press ENTER. Message "Sav ng parameter set" s shown br efly. If the sav ng succeeds, the panel LED s green for a moment and message "Set save OK" s shown before return ng to the ma n Ed t menu. • To return to the prev ous menu, press CANCEL.	NC Confirm changes? NO Yes CANCEL 00:00 ENTER

How to edit the visibility of a parameter in a set

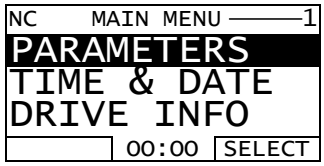
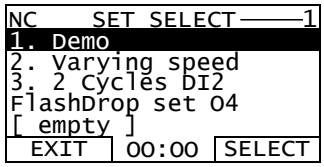
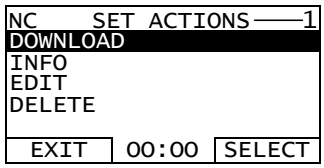
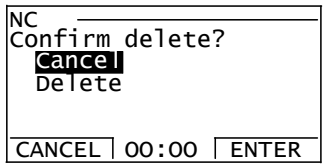
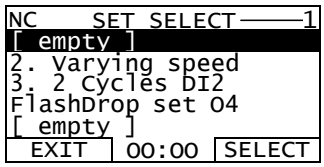
Step	Action	Display
1.	If you are not in the Edit menu, see *How to edit a parameter set* on page *35* for instructions.	NC EDIT MENU 1 ACTIVE SET PARAMETER VISIBILITY GROUP VISIBILITY USER SET1 USER SET2 EXIT 00:00 SELECT
2.	Select PARAMETER VISIBILITY with keys ▲ and ▼, and press SELECT. Message "Opening parameter set" is shown briefly.	NC GROUPS 01 01 OPERATING DATA 04 FAULT HISTORY 10 START/STOP/DIR 11 REFERENCE SELECT 12 CONSTANT SPEEDS EXIT 00:00 SELECT
3.	Select the parameter group with keys ▲ and ▼. Only visible groups are shown. Press SELECT.	NC PARAMETERS 1201 CONST SPEED SEL Visible 1202 CONST SPEED 1 1203 CONST SPEED 2 1204*CONST SPEED 3 EXIT 00:00 HIDE
4.	Select the parameter with keys ▲ and ▼. The current visibility (Visible/Hidden) of the selected parameter is shown below it. Hidden parameters are indicated with an asterisk (*).	NC PARAMETERS 1201 CONST SPEED SEL 1202 CONST SPEED 1 Visible 1203 CONST SPEED 2 1204*CONST SPEED 3 EXIT 00:00 HIDE
5.	• To hide a visible parameter, press HIDE. • To show a hidden parameter, press SHOW.	NC PARAMETERS 1201 CONST SPEED SEL 1202*CONST SPEED 1 Hidden 1203 CONST SPEED 2 1204*CONST SPEED 3 EXIT 00:00 SHOW
6.	When you exit the Groups menu, you are requested to confirm your changes. • To cancel the new values and keep the original, select No with keys ▲ and ▼, and press ENTER. • To save the new values, select Yes with keys ▲ and ▼, and press ENTER. Message "Saving parameter set" is shown briefly. If the saving succeeds, the panel LED is green for a moment and message "Set save OK" is shown before returning the main Edit menu. • To return to the previous menu, press CANCEL.	NC Confirm changes? No Yes CANCEL 00:00 ENTER

Note: The visibility definitions are common to active parameter set and user sets.

How to edit the visibility of a parameter group in a set

Step	Action	Display
1.	If you are not in the Edit menu, see *How to edit a parameter set* on page *35* for instructions.	NC EDIT MENU 6 ACTIVE SET PARAMETER VISIBILITY GROUP VISIBILITY USER SET1 USER SET2 EXIT 00:00 SELECT
2.	Select GROUP VISIBILITY with keys ▲ and ▼, and press SELECT. Message "Opening parameter set" is shown briefly.	NC GROUPS 01 OPERATION DATA Visible 03*FB ACTUAL SIGNALS 04 FAULT HISTORY 10 START/STOP/DIR EXIT 00:00 HIDE
3.	Select the parameter with keys ▲ and ▼. The current visibility (Visible/Hidden) of the selected parameter group is shown below it. Hidden parameter groups are indicated with an asterisk (*).	NC GROUPS 11 REFERENCE SELECT 12 CONSTANT SPEEDS Visible 13 ANALOGUE INPUTS 14 RELAY OUTPUS EXIT 00:00 HIDE
4.	• To hide a visible group, press HIDE. Hiding a group also makes all of its parameters hidden. • To show a hidden group, press SHOW. Showing a group also makes all of its parameters visible.	NC GROUPS 11 REFERENCE SELECT 12*CONSTANT SPEEDS Hidden 13 ANALOGUE INPUTS 14 RELAY OUTPUS EXIT 00:00 SHOW
5.	When you exit the Groups menu, you are requested to confirm your changes. • To cancel the new values and keep the original, select No with keys ▲ and ▼, and press ENTER. • To save the new values, select Yes with keys ▲ and ▼, and press ENTER. Message "Saving parameter set" is shown briefly. If the saving succeeds, the panel LED is green for a moment and message "Set save OK" is shown before returning to the main Edit menu. • To return to the previous menu, press CANCEL.	NC Confirm changes? NO Yes CANCEL 00:00 ENTER

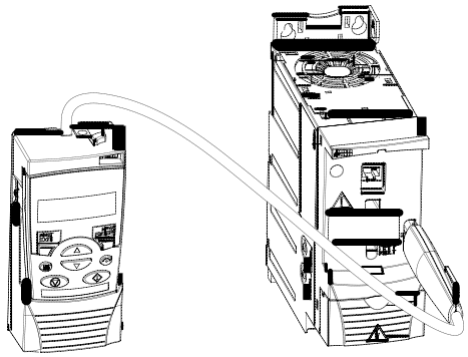
How to delete a parameter set

Step	Action	Display
1.	If you are not in the Main menu, press EXIT repeatedly until you get there.	
2.	Go to the Parameters mode by selecting PARAMETERS on the menu with keys ▲ and ▼, and pressing SELECT.	
3.	Select the parameter set with keys ▲ and ▼, and press SELECT.	
4.	Select DELETE with keys ▲ and ▼, and press ENTER.	
5.	• To cancel the clearing of the set and return to the Set Actions menu, press CANCEL or select Cancel with keys ▲ and ▼, and press ENTER. • To clear the set, select Delete with keys ▲ and ▼, and press ENTER. Message "Deleting parameter set" is shown. If the clearing succeeds, the panel LED is green for a moment and message "Delete set OK" is shown briefly. The control panel returns to the set select ion display. The cleared set is now shown as "[empty]".	

How to download a parameter set to a drive

You must have a template compat ble w th the dr ve where you ntend to download the set. For check ng the dr ve nformat on, see *How to view information about the drive connected to the FlashDrop* on page *27*.

If there s no template w th the propert es you need, you have to download the correct template from the Internet accord ng to the nstruct ons n *How to download templates from the Internet* on page *28*.

Step	Action	Display
1.	If you are not n the Ma n menu, press EXIT repeatedly unt l you get there.	NC MAIN MENU 1 PARAMETERS TIME & DATE DRIVE INFO 00:00 SELECT
2.	Go to the Parameters mode by select ng PARAMETERS on the menu w th keys ▲ and ▼, and press ng SELECT.	NC SETS 1 1. Demo 2. Varying speed 3. 2 Cycles DI2 FlashDrop set 04 [empty] EXIT 00:00 SELECT
3.	Ensure that the dr ve s d sconnected from the ma ns (AC power source). Insert the programm ng t p n the FlashDrop connect on of the dr ve. Depend ng on the dr ve type, the connect on s located on the front of the dr ve or n the control panel recess. The top left corner of the FlashDrop d splay shows now DRV nd cat ng that the FlashDrop s connected to a dr ve. 	DRV SETS 1 1. Demo 2. Varying speed 3. 2 Cycles DI2 FlashDrop set 04 [empty] EXIT 00:00 SELECT
4.	• Select the parameter set w th keys ▲ and ▼, and press ◈ to start the download. Message "Download ng parameter set" s shown br efly. or • Select the parameter set w th keys ▲ and ▼, and press SELECT. Then press ◈ to start the download, or select DOWNLOAD w th keys ▲ and ▼ and press SELECT. Message "Download ng parameter set" s shown br efly. The amount of parameter changes compared to default sett ngs affects the download t me.	DRV SET ACTIONS 1 DOWNLOAD INFO EDIT DELETE EXIT 00:00 SELECT

Step	Action	Display
5.	If the download succeeds, the panel LED s green for a moment and message "Download successfully completed" s shown br efly before return ng to the prev ous d splay.	DRV MESSAGE Download successfully completed OK 00:00

How to view information about the FlashDrop

Step	Action	Display
1.	If you are not n the Ma n menu, press EXIT repeatedly unt l you get there.	NC MAIN MENU 1 PARAMETERS TIME & DATE DRIVE INFO 00:00 SELECT
2.	Go to the FlashD Info mode by select ng FLASHD INFO on the menu w th keys ▲ and ▼, and press ng SELECT. The d splay shows the follow ng nformat on about the FlashDrop: FIRMWARE: f rmware vers on of the base un t	NC FLASHD INFO FIRMWARE 1O1A EXIT 00:00
3.	Return to the Ma n menu by press ng EXIT.	NC MAIN MENU 1 TIME & DATE DRIVE INFO FLASHD INFO 00:00 SELECT

How to find out the control panel version

Step	Action	Display
1.	If the power s sw tched on, sw tch t off.	
2.	Keep key ? pressed down wh le you sw tch on the power and read the nformat on. The d splay shows the follow ng control panel nformat on: Panel SW: panel f rmware vers on Rom CRC: panel ROM check sum Flash Rev: flash content vers on Flash content comment. When you release the ? key, the control panel goes to the Ma n menu.	PANEL VERSION INFO Panel SW: x.xxx Rom CRC: xxxxxxxxxx Flash Rev: x.xx xxxxxxxxxxxxxxxxxxxxx

Fault tracing

What this chapter contains

The chapter lists error messages and corrective actions.

Error messages

An error message shown on the panel display indicates abnormal FlashDrop status. Reset the FlashDrop by pressing

.

Using the information given in the table below, most error causes can be identified and corrected. If not, contact an ABB representative.

ERROR	CAUSE	WHAT TO DO
Download/Upload error 16 No drive connected	1) The programming tip is not inserted in the FlashDrop connection of the drive or the connection is loose. 2) The drive is not compatible with the FlashDrop.	1) Check that the programming tip is firmly inserted in the FlashDrop connection of the drive, see page *43*. 2) Check that the drive is compatible with the FlashDrop, see page *13*.
Upload error 51 Drive not connected or the drive is not compatible with the FlashDrop.	1) The programming tip is not inserted in the FlashDrop connection of the drive or the connection is loose. 2) The drive is not compatible with the FlashDrop.	1) Check that the programming tip is firmly inserted in the FlashDrop connection of the drive, see page *32*. 2) Check that the drive is compatible with the FlashDrop, see page *13*.
Download error 64 Incompatible drive type	The drive type of the set is not the same as the type of the drive where you are downloading the set.	Download a compatible set. If it does not exist, create a new set using the correct template, see page *30*. If the FlashDrop or DrivePM does not have the appropriate template, download it from the Internet, see page *28*. For checking the set and drive information, see pages *34* and *27*, respectively.
Download error 65 Incompatible drive rating	The drive rating of the set is not the same as the rating of the drive where you are downloading the set.	
Download error 68 Incompatible drive parameter table version	The parameter table version of the set is not the same as that of the drive where you are downloading the set.	
Download error 99 Incompatible drive local variation	The local variation of the set is not the same as that of the drive where you are downloading the set.	
Set Open/Edit/Download/ Upload error 35 No compatible template found	The set has been created using a template that does not currently exist in the FlashDrop.	Download the missing template from the DrivePM. If the DrivePM does not have a suitable template, download it from the Internet, see page *28*. For finding out the properties of the template used in the set, check the drive type, area, control mode, parameter table version and drive rating in the set information, see page *34*.
File open failed	File system error	Try again. If the operation still fails, contact your local ABB representative.
File save failed		
File clear failed		
CRC error		

Maintenance and hardware diagnostics

What this chapter contains

The chapter conta ns prevent ve ma ntenance nstruct ons and LED nd cator descr pt ons.

Safety

WARNING! Read the nstruct ons n sect on *Safety instructions* on page *13* before perform ng any ma ntenance on the equ pment. Ignor ng the safety nstruct ons can cause njury or death.

Maintenance intervals

The FlashDrop requ res very l ttle ma ntenance. The table l sts the rout ne ma ntenance ntervals recommended by ABB.

Maintenance	Interval	Instruction
Base un t battery charg ng	Approx mately every four hours	See *Charging* on page *15*.
Base un t battery replacement	As needed	See *Battery replacement* on page *48*.
Control panel battery replacement	Every ten years	See *Battery* on page *48*.

Software

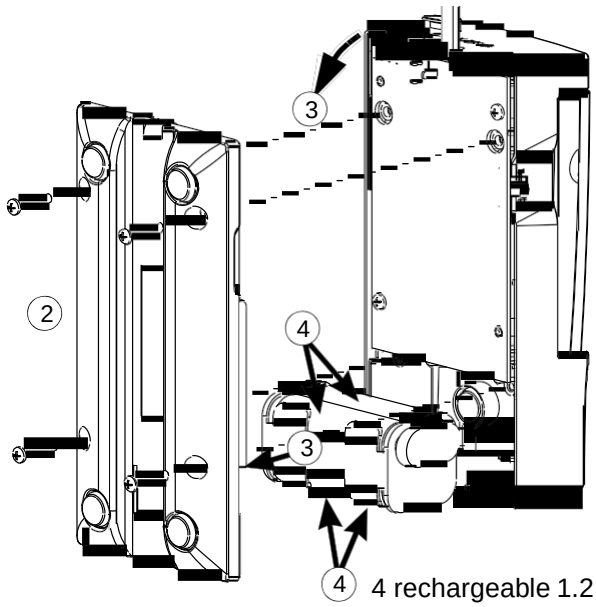
It s poss ble to update the FlashDrop software us ng the Dr vePM program. See the Dr vePM help for more nformat on.

Base unit

Battery replacement

Replace the batter es when the FlashDrop needs frequent recharg ng.

1. Sw tch off the base un t and d sconnect the charger f n use.
2. Unscrew the screws n the bottom plate of the base un t and remove the plate.
3. T p the base un t sl ghtly to get out the battery holder.
4. Replace all the four batter es w th rechargeable 1.2 V AA N MH batter es. Use only batter es stand ng 1.3 amperes charg ng current (spec f ed n the charger).
5. Put the battery holder back n place and attach the bottom plate.
6. Sw tch on the base un t.



4 rechargeable 1.2 V AA N MH batter es

Control panel

Cleaning

Use a soft damp cloth to clean the control panel. Avo d harsh cleaners wh ch could scratch the d splay w ndow.

Battery

The control panel uses a battery to keep the real t me clock operat ng n memory dur ng power nterrupt ons.

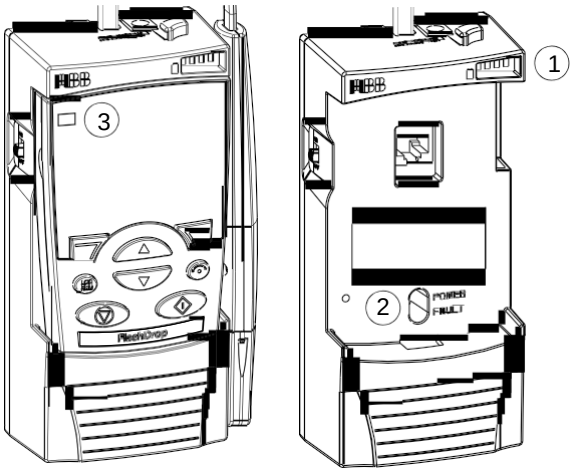
The expected l fe for the battery s greater than ten years. To remove the battery, use a co n to rotate the battery holder on the back of the control panel. Replace the battery w th type CR2032.

Note: The battery s NOT requ red for any control panel funct ons, except the clock.

LEDs

The base unit indicates the battery charge level with four LEDs on the top right corner (1 in the figure). In addition, the base unit has a green and a red LED on the front (behind the control panel) to indicate the status of the FlashDrop (2). The control panel has one LED (3). The table below describes the LED indications.

Where	LED off	LED lit and steady		LED blinking	
On the top right corner of the base unit (1)	All LEDs off - no charge left	Green	Number of LEDs lit indicates the charge level, during charging all LEDs are lit.	-	
On the front of the base unit (2). If the control panel is attached to the base unit, remove it to be able to see the LEDs.	No power	Green	Ready	Green	-
		Red	Operation failed. Press OK to reset.	Red	-
At the top left corner of the control panel (3)	Ready	Green	Set download, saving or clearing has succeeded.	Green	-
		Red	-	Red	Operation failed. Press OK to reset.



Technical data

What this chapter contains

The chapter conta ns the techn cal spec f cat ons of the FlashDrop: we ght, t me of use w th one charge, charge t me, amb ent cond t ons, mater als, appl cable standards and mark ngs.

Weight

Approx mately 0.4 kg (0.88 lb).

Time of use with one charge

Approx mately four hours w th typ cal use.

Charge time

Approx mately 1.5 hours.

Ambient conditions

Temperature -10 to +40°C (14 to 104°F). No frost allowed.

Materials

Base unit and programming tip enclosure	PC/ABS 1.5.2.0 mm and PA66+25%GF 1.0 mm, all n colour NCS 1502-Y (RAL 9002 / PMS 420 C)
Panel	PC/ABS 1.5.2.0 mm, colour NCS 1502-Y (RAL 9002 / PMS 420 C) and PC 1.2 mm, clear
Package	Corrugated cardboard.
Disposal	The FlashDrop conta ns raw mater als that should be recycled to preserve energy and natural resources. The package mater als are env ronmentally compat ble and recyclable. All metal parts can be recycled. The plast c parts can e ther be recycled or burned under controlled c rcumstances, accord ng to local regulat ons. Most recyclable parts are marked w th recycl ng marks. If recycl ng s not feas ble, all parts exclud ng electrolyt c capac tors and pr nted c rcu t boards can be landf lled. The DC capac tors conta n electrolyte and the pr nted c rcu t boards conta n lead, both of wh ch are class f ed as hazardous waste w th n the EU. They, as well as batter es, must be removed and handled accord ng to local regulat ons. For further nformat on on env ronmental aspects and more deta led recycl ng nstruct ons, please contact your local ABB d str butor.

Applicable standards

The FlashDrop compl es w th the follow ng standard:

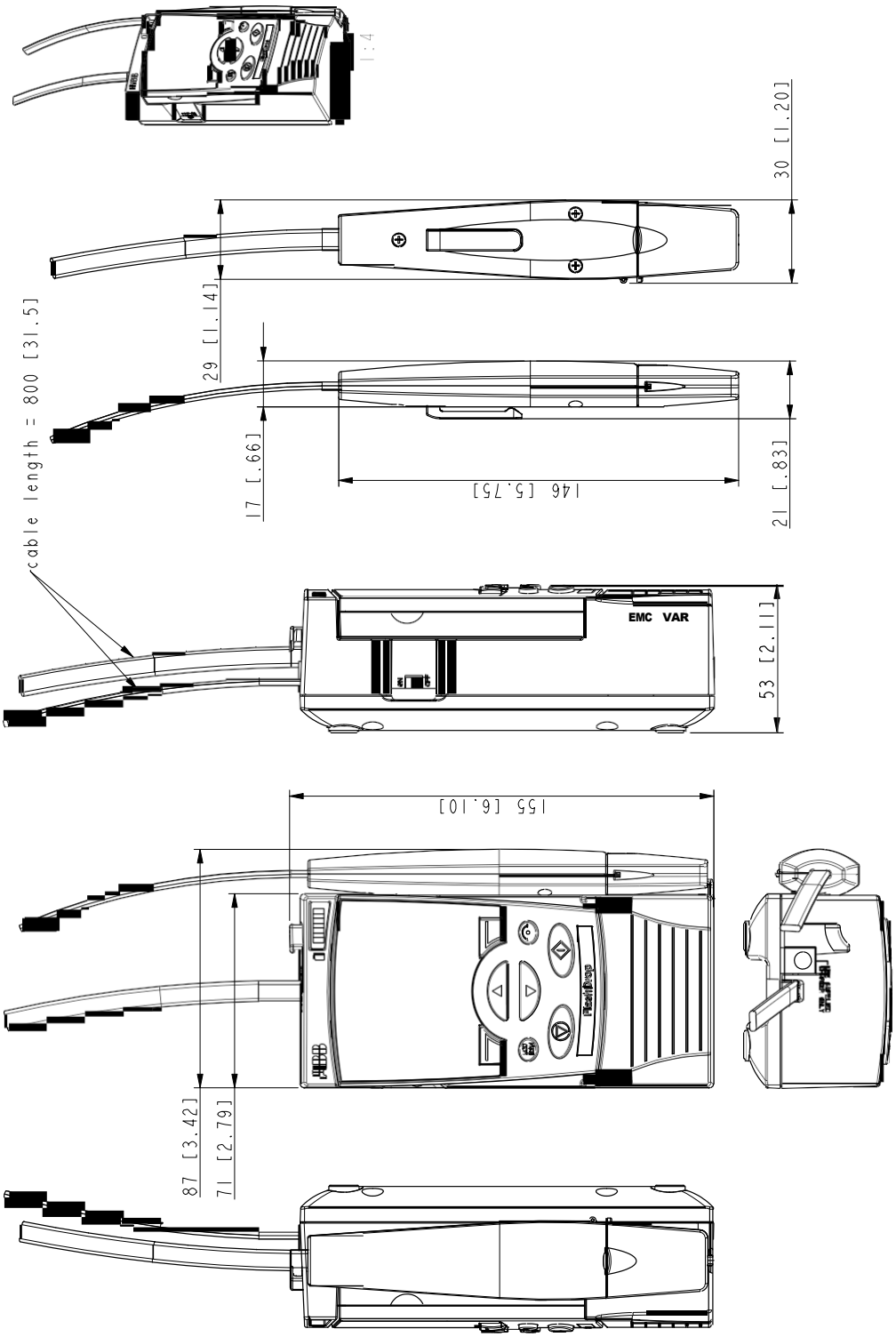
• IEC/EN 61800-3 (2004)	Adjustable speed electr cal power dr ve systems. Part 3: EMC requ rements and spec f c test methods

CE marking

The FlashDrop carr es the CE mark ng.

Dimensions

The dimensional drawing of the FlashDrop is shown below. The dimensions are given in millimetres and [inches].



FlashDrop dimensions

Glossary

Parameter table

The parameter table s the feature of dr ve's f rmware. The parameter table prov des the parameters needed to def ne the user nterface to a dr ve. The dr ve's parameters and the r ndexes, types, descr pt ve names, opt ons, value ranges and select ons, default values, dependenc es on each other and act on flags are def ned n the dr ve f rmware. All th s data together s called as parameter table.

Parameter table version

The parameter table has vers on number (P3305) wh ch has the same format as the dr ve f rmware vers on (P3301). Whenever there s added new parameter n the parameter table or there are made other changes n attr butes of the parameter table, the parameter table vers on s changed. Typ cally the parameter table vers on s changed when new dr ve f rmware vers on s released.

Parameter template

The dea of parameter template s the same as w th Power Po nt templates that are turned nto presentat ons by add ng more nformat on to them. The template s the descr pt on of dr ve's parameter table for offl ne data process ng purposes. For nstance, the template makes t poss ble to ed t the values of parameters n offl ne mode wh ch s always the case when operat ng w th FlashDrop base un t or Dr vePM tool. The templates def ne all requ red parameter table attr butes (e.g. descr pt ve names, value ranges and default values of parameters) n a form wh ch s supported by both FlashDrop base un t and Dr vePM tool.

The templates are parameter table vers on spec f c b nary and ASCII f les. When nstall ng the Dr vePM tool, the templates suppl ed by Dr vePM CD-ROM are nstalled automat cally n ded cated Dr vePM subfolders. The template f le name ncludes the parameter table vers on number. The templates supported by Dr vePM tool have the f le extens on .par and the templates supported by FlashDrop base un t have the f le extens on .fdt. For example, the template f le 251A_EUR_400V_Scalar_Industr al_En.par descr bes the parameter table of European vers on of 400V ACS350 dr ve when used n scalar control mode n a form that s supported by Dr vePM tool and the f le ACS350_251A_Eur_Scalar.fdt descr bes the same content n a form that s supported by FlashDrop base un t.

To ensure that FlashDrop parameter sets are always 100% compat ble w th the dr ve f rmware, t s requ red that the target dr ve and the parameter set have exactly the same parameter table vers on. The parameter template s the base for the parameter set. W thout template the creat ng and ed t ng of a parameter set s not poss ble.

Parameter set

The parameter set stores the parameter values and v s b l ty nformat on together w th header and template related nformat on (e.g. set's name, author, creat on date and t me, dr ve type and rat ng, local zat on and control mode). Based on the use of selected template the FlashDrop parameter set s created w th FlashDrop base un t or w th Dr vePM PC tool (and then downloaded to the base un t). The parameter set

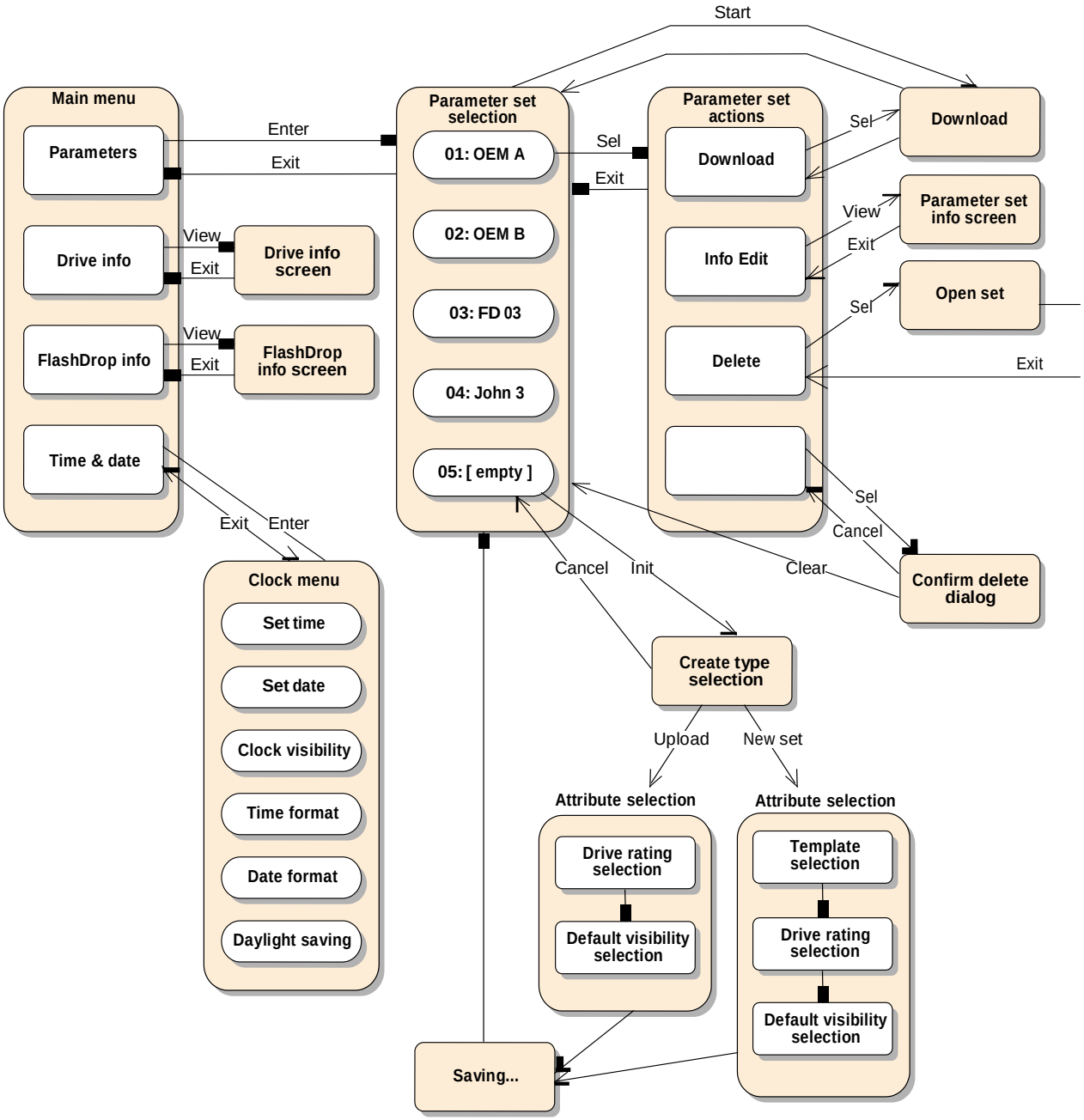
can be downloaded from the FlashDrop base un t to a dr ve. Dur ng the next power up of a dr ve, the downloaded parameter set comes over to act ve parameter set, custom zes dr ve's control panel v ew and updates the content of user sets and overr de set.

Size dependent / Size independent

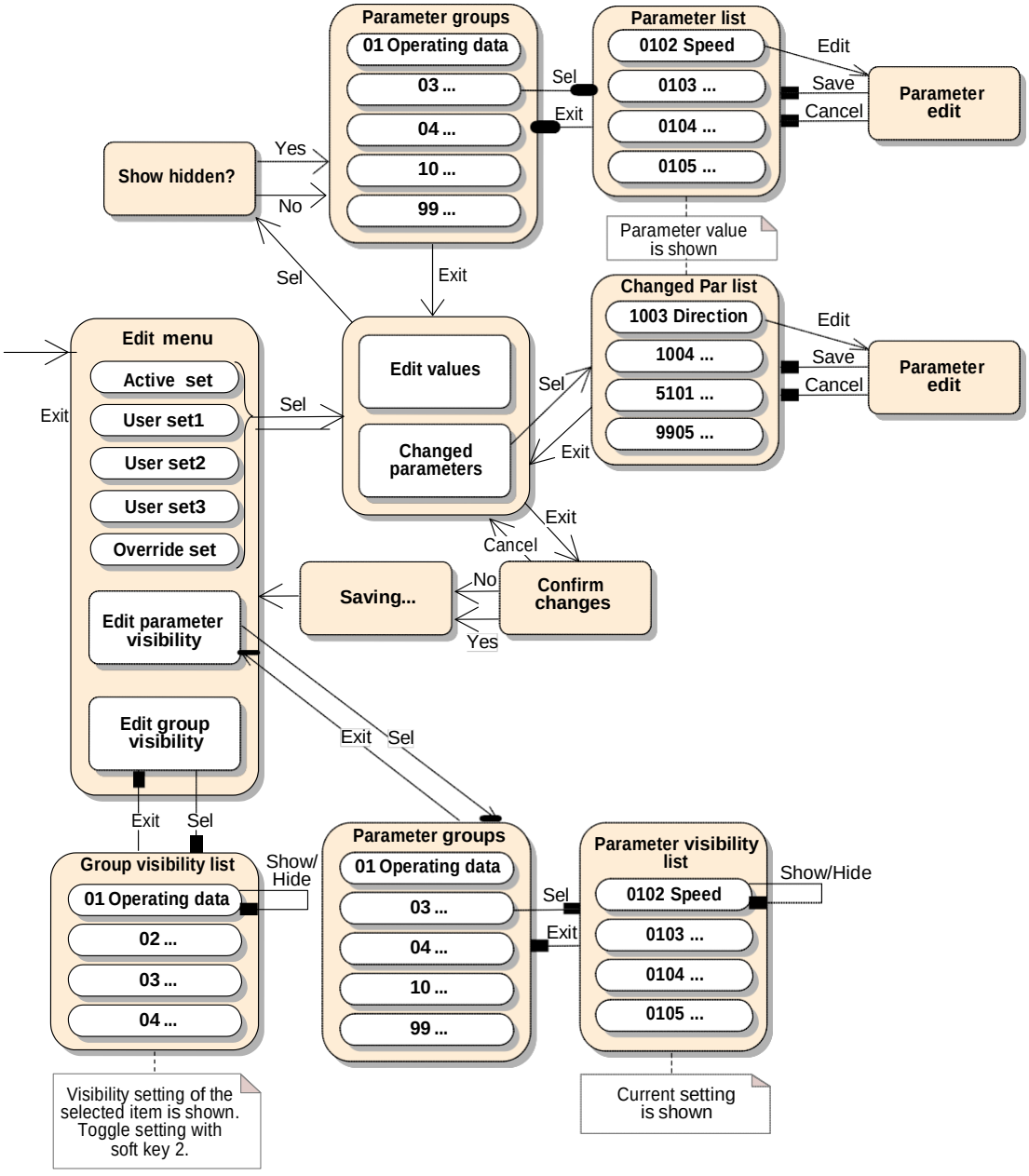
The dr ve s ze dependent parameter set s compat ble only w th dr ves wh ch s ze (rat ng) compl es w th the s ze of the set n quest on. The dr ve s ze ndependent parameter set can be downloaded n a dr ve w thout rat ng l m tat on.

Additional information

State diagram of the panel user interface



Cont nues to the next page.



Cont nued from the prev ous page.

Drive ratings table

	ACS1S0	ACS3S0	short size code
200V, 1phase	ACS150-01x-02A4-2	ACS350-01x-02A4-2	2A41
	ACS150-01x-04A7-2	ACS350-01x-04A7-2	4A71
	ACS150-01x-06A7-2	ACS350-01x-06A7-2	6A71
	ACS150-01x-07A5-2	ACS350-01x-07A5-2	7A51
	ACS150-01x-09A8-2	ACS350-01x-09A8-2	9A81
200V, 3phase	ACS150-03x-02A4-2	ACS350-03x-02A4-2	2A42
	ACS150-03x-03A5-2	ACS350-03x-03A5-2	3A52
	ACS150-03x-04A7-2	ACS350-03x-04A7-2	4A72
	ACS150-03x-06A7-2	ACS350-03x-06A7-2	6A72
	ACS150-03x-07A5-2	ACS350-03x-07A5-2	7A52
	ACS150-03x-09A8-2	ACS350-03x-09A8-2	9A82
		ACS350-03x-13A3-2	0132
		ACS350-03x-17A6-2	0172
400V, 3phase	ACS150-03x-01A2-4	ACS350-03x-01A2-4	1A24
	ACS150-03x-01A9-4	ACS350-03x-01A9-4	1A94
	ACS150-03x-02A4-4	ACS350-03x-02A4-4	2A44
	ACS150-03x-03A3-4	ACS350-03x-03A3-4	3A34
	ACS150-03x-04A1-4	ACS350-03x-04A1-4	4A14
	ACS150-03x-05A6-4	ACS350-03x-05A6-4	5A64
	ACS150-03x-07A3-4	ACS350-03x-07A3-4	7A34
	ACS150-03x-08A8-4	ACS350-03x-08A8-4	8A84
		ACS350-03x-12A5-4	0124
		ACS350-03x-15A6-4	0154
		ACS350-03x-23A1-4	0234

	ACS&ACHSS0	short size code
200V, 3phase	ACx550-xx-04A6-2	4A62
	ACx550-xx-06A6-2	6A62
	ACx550-xx-07A5-2	7A52
	ACx550-xx-012A-2	0122
	ACx550-xx-017A-2	0172
	ACx550-xx-024A-2	0242
	ACx550-xx-031A-2	0312
	ACx550-xx-046A-2	0462
	ACx550-xx-059A-2	0592
	ACx550-xx-075A-2	0752
	ACx550-xx-088A-2	0882
	ACx550-xx-114A-2	1142
	ACx550-xx-143A-2	1432
	ACx550-xx-178A-2	1782
	ACx550-xx-221A-2	2212
	ACx550-xx-248A-2	2482

	ACS&ACHSS0	short size code
400V, 3phase	ACH550-01-02A4-4	2A44
	ACx550-xx-03A3-4	3A34
	ACx550-xx-04A1-4	4A14
	ACx550-xx-05A4-4	5A44
	ACx550-xx-06A9-4	6A94
	ACx550-xx-08A8-4	8A84
	ACx550-xx-012A-4	0124
	ACx550-xx-015A-4	0154
	ACx550-xx-023A-4	0234
	ACx550-xx-031A-4	0314
	ACx550-xx-038A-4	0384
	ACx550-xx-044A-4	0444
	ACx550-xx-045A-4	0454
	ACx550-xx-059A-4	0594
	ACx550-xx-072A-4	0724
	ACx550-xx-077A-4	0774
	ACx550-xx-078A-4	0784
	ACx550-xx-087A-4	0874
	ACx550-xx-096A-4	0964
	ACx550-xx-097A-4	0974
	ACx550-xx-124A-4	1244
	ACx550-xx-125A-4	1254
	ACx550-xx-157A-4	1574
	ACx550-xx-180A-4	1804
	ACx550-xx-195A-4	1954
	ACx550-xx-246A-4	2464
400V, 3phase	ACx550-xx-02A7-6	2A76
	ACx550-xx-03A9-6	3A96
	ACx550-xx-06A1-6	6A16
	ACx550-xx-09A0-6	9A06
	ACx550-xx-011A-6	0116
	ACx550-xx-017A-6	0176
	ACx550-xx-022A-6	0226
	ACx550-xx-027A-6	0276
	ACx550-xx-032A-6	0326
	ACx550-xx-041A-6	0416
	ACx550-xx-052A-6	0526
	ACx550-xx-062A-6	0626
	ACx550-xx-077A-6	0776
	ACx550-xx-099A-6	0996
	ACx550-xx-125A-6	1256
	ACx550-xx-144A-6	1446

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